

CLAIMS

1. A drying and storing apparatus for powdered or granular material, comprising:

a heating and drying chamber having at its lower end a discharge port and therein a thermal conductive heating means; and

a hopper chamber connected to the upper end of said heating and drying chamber;

wherein said heating and drying chamber and said hopper chamber constitutes an integrally combined material storage processing tank for powdered or granular material.

2. The drying and storing apparatus for powdered or granular material as set forth in claim 1,

wherein said material storage processing tank has airtight construction and capable of being depressurized in its inner by means of a decompression means.

3. The drying and storing apparatus for powdered or granular material as set forth in claim 1 or 2,

wherein said thermal conductive heating means comprises

a heating source and a thermal conduction means through which heat generated from said heating source is conducted into said powdered or granular material stored in said heating and drying chamber.

4. The drying and storing apparatus for powdered or granular material as set forth in claim 3,

wherein said thermal conductive heating means comprises an outer tube unit and/or an inner tube unit; and

wherein said outer tube unit comprises

a tube wall, a first heater as a heating source provided in said tube wall, and

plural fins as a thermal conduction means projected from the inside of said tube wall into the center and spaced in a circumferential direction,

whereas said inner tube unit comprises

a pillar body hung at the center of said outer tube unit,

a second heater as a heating source embedded in said pillar body,

and

plural fins as a thermal conduction means radially projected from said pillar body.

5. The drying and storing apparatus for powdered or granular material as set forth in claim 4,

wherein said tube wall, fins of said outer tube unit, said tubular body and said fins of said inner tube unit are all made of highly heat conductive metal.

6. The drying and storing apparatus for powdered or granular material as set forth in claim 4 or 5,

wherein said pillar body has at its lower end a rectifier whose diameter is enlarged downwardly.

7. The drying and storing apparatus for powdered or granular material as set forth in any one of claims 1 - 6, wherein an open-close cover is provided at its upper end of said hopper chamber and wherein a powdered or granular material is fed into said storage processing tank during said cover is opened.

8. The drying and storing apparatus for powdered or granular material as set forth in claim 7, wherein said cover has an opening on which a charge hopper is further provided via a discharge valve.

9. A drying and storing apparatus for powdered or granular material as set forth in any one of claims 1 - 8, wherein a carrier gas introduction means by which a carrier gas is introduced into said storage processing tank is further provided at said material storage processing tank.

10. A feeding system of powdered or granular material using said drying and storing apparatus for powdered or granular material as set forth in any one of claim 1 - 9, wherein said feeding system comprises

a feeder unit provided at the lower discharge port of the drying and storing apparatus,

a pneumatic transportation means connected to said feeder unit through which a powdered or granular material dried in said drying and storing apparatus is transported into a collector connected at the end

of said pneumatic transportation means while being discharged from said discharge port,

whereby said powdered or granular material collected in said collector is fed into a processing apparatus for powdered or granular material.

11. The feeding system of powdered or granular material as set forth in claim 10,

wherein said feeder unit is connected with a circulation pipe connected to said drying and storing apparatus through which a powdered or granular material discharged from said drying and storing apparatus is pneumatically circularly transported so as to return to said drying and storing apparatus.

12. The feeding system of powdered or granular material as set forth in claim 9 or 10,

wherein said powdered or granular material is resin pellet and wherein said processing apparatus of powdered or granular material is a resin molding machine.